

Quick Facts about the Microbiological Data Program (MDP)

History

- ▶ The **Microbiological Data Program (MDP)** was **initiated in 2001** by USDA's Agricultural Marketing Service (AMS).
- ▶ The goal of MDP is to provide data on **the presence of potential pathogens and indicator bacteria on fresh fruit and vegetables**.
- ▶ AMS coordinates its planning and policy requirements with the Centers for Disease Control and Prevention (CDC), the Food and Drug Administration (FDA), and USDA's Agricultural Research Service (ARS) and National Agricultural Statistics Service (NASS).
- ▶ MDP is currently testing **cantaloupe, green onions, lettuce, tomatoes and alfalfa sprouts**.
- ▶ MDP currently tests for 3 organisms: ***E. coli* with pathogenic potential, *Salmonella*, and *E. coli* O157:H7**.
- ▶ **Detection methods** include **PCR** (polymerase chain reaction) method for detection of *Salmonella*, *E. coli* O157:H7 and *E. coli* with pathogenic potential.
- ▶ MDP plans to introduce testing for *Shigella spp.* in 2006 and is currently testing the methodology.
- ▶ MDP has shared 2002, 2003, and 2004 data with CDC and FDA.
- ▶ **MDP Progress Update and Data Summary** reports for 2003, 2004, and 2005 can be found on the **Program Reports** page.

Sampling Operations

- ▶ MDP samples are collected by 11 participating States, which represent about **50 percent** of the Nation's population and all regions of the country.
- ▶ The normal **monthly** sampling rate is **64 site samples** per commodity. Each **site sample** collected consists of **three individual units**, which are treated as three distinct laboratory samples.
- ▶ Samples are collected **close to the point of consumption**, at terminal markets and large chain store distribution centers.
- ▶ MDP maintains Standard Operating Procedures designed to provide criteria to State samplers for site selection and specific instructions for sample selection, shipping, and handling.
- ▶ Support for all sampling operations is provided by USDA's National Agricultural Statistics Service.

Laboratory Operations

- ▶ Analytical services for MDP are provided by 1 Federal and 8 State laboratories. Participation as a contributing laboratory is **voluntary** and is funded through Cooperative Agreements between the States and USDA.
- ▶ Upon receipt, all laboratory samples are measured for **surface temperature** using an infrared (IR) thermometer. Samples are **refrigerated** until analysis begins. The **holding time** does not exceed **48 hours**.

- ▶ Accepted samples are **prepared** using standardized methods. Samples are immersed and agitated in a buffer solution. This solution is then tested for the target organisms. Presence or absence of **pathogenic *E. coli*, *Salmonella*, and *E. coli* O157:H7** are determined.
- ▶ ***E. coli*** positive samples are screened for the presence of specific virulence-associated genes. Isolates are tested for **antibiotic resistance** and **serotype**.
- ▶ For positive ***Salmonella* and *E. coli* O157:H7** results, cultures are sent to a specialized laboratory for **antibiotic resistance** testing and **serotyping**.
- ▶ All samples are prepared and analyzed in accordance with program-wide Standard Operating Procedures that **ensure consistency** between laboratories.
- ▶ MDP requires continuous **quality assurance** controls and on-site monitoring by government QA officers.
- ▶ Performance **equivalency** of the participating laboratories is monitored by a program-wide **check sample program**.
- ▶ MDP has arranged to **ship produce washes** to the FDA Office of Applied Research and Safety Assessment for detecting the presence of **waterborne coccidian parasites, cyclospora, and cryptosporidium** in fresh fruit and vegetables.

Database Management & Reporting

- ▶ MDP maintains an **electronic database** which serves as a central repository for its microbiological monitoring data. The data captured and stored in the MDP database include product information, positive and negative findings, and quality assurance control results for each set of samples.
- ▶ Each **calendar year** the database is stored in a separate database structure, allowing for easier administration and reporting of data.
- ▶ MDP utilizes a customized Web-based **software application** package that provides participating laboratories with the ability to **enter the MDP data** into interactive data entry screens using just a Web browser and **Internet** access. The data are stored directly into a central database that resides in Washington, D.C.
- ▶ Ad hoc queries and customized reports can be generated in response to **data requests** from government agencies and the public sector.
- ▶ The MDP Progress Update and Data Summary for 2002, 2003, 2004, and 2005 are available on the **Program Reports** page.